

# Adobe Flash-Based Interactive Media Development on Social Studies Learning Outcomes Class IV

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## Abstract

This study was motivated by the use of technology-based learning media that was not optimal, thus resulting in low social studies learning outcomes. This study aims to develop interactive learning media based on Adobe Flash with the NHT model on social studies learning outcomes. This study used a quantitative approach with the type of research and development (R&D). The subjects of this study were 20 students in grade IV at SDN Bumiharjo 2 Demak. Observations, Interviews, questionnaires, tests, and documentation were carried out to collect the data. Data analysis was conducted by a feasibility test and media effectiveness test. The results showed that Adobe Flash-based interactive media is feasible to be used with the assessment of media experts and material experts obtained percentages of 100% and 96.8%. This media is effectively used based on the results of the t-test showed  $t_{count} (5.690) > t_{table} (2.024)$ , then  $H_a$  is accepted, while the average increase (n-gain) from the initial test to the final test was 0.60 with moderate criteria. The conclusion of this study is that Adobe Flash-based interactive learning media with the NHT model is feasible and effective to use in social studies learning for class IV.

**Keywords:** Adobe Flash-based interactive media, learning outcomes. social studies

## 1. INTRODUCTION

School as one of the institutions providing formal education, seeks to improve the quality of education. Regulation of the Minister of Education and Culture of the Republic of Indonesia No. 22 of 2016 concerning Standards for Primary and Secondary Education, states that learning activities must be carried out interactively, inspiring, fun, challenging, efficient, motivating students to participate actively, and providing sufficient space for initiative, creativity. Somantri (in Sapriya, 2020: 11) states that social studies education is a selection of social sciences and humanities disciplines as basic human activities that are organized and presented psychologically and scientifically in order to achieve educational goals.

Social studies learning has the aim of educating students to become good citizens who have knowledge, skills, and social care that are useful both for themselves and for society and the country (Hidayati 2008: 1.24).

Based on the results of interviews and identification of problems with fourth grade teachers at SDN Gugus Sultan Agung Demak, problems related to the low learning outcomes of fourth grade students were obtained. This is because the use of technology-based learning media is not optimal and the learning model still uses the lecture method, question and answer, demonstration, discussion. Therefore, students are less motivated in learning social studies. This is shown from the learning outcomes of fourth grade students at SDN Gugus Sultan Agung Demak with

a KKM = 70 in the odd Semester Final Assessment (PAS) for the 2020/2021 academic year that in a group consisting of 98 students the percentage of incompleteness is 51.02%. or 50 students and the percentage of completion is 48.98% or 48 students.

According to Jan Piaget, the age of elementary school students, namely the age of 7-12 years, lies at the concrete operational level so that in learning students in understanding a concept, they focus more on things that are concrete (Hidayati 2008: 1-29). Therefore, the teacher when delivering the material is required to use concrete things such as learning media. According to Arsyad (2019: 10) learning media are everything that is used to channel messages in the learning process that can stimulate students' interest and attention in learning. Based on the results of the above explanation, to improve student learning outcomes in social studies learning content, namely interactive media based on Adobe Flash with the NHT model, it can be used as an alternative choice.

According to Widyanto (2016: 49) Adobe Flash Professional CS6 is superior to Microsoft Power Point as a learning support, for example it can add animated objects to be displayed. According to Darari (2017: 36) Adobe Flash is an animation that contains several elements, namely in the form of backgrounds, objects and display movements that can be made by users themselves.

The research that supports this research is the research conducted by Tety Nur Cholifah et al (2019: 81-95) entitled "Development of Adobe Flash Media Based on South Malang Local Wisdom in Thematic Learning". The purpose of this research is to develop Adobe Flash media

based on local wisdom of South Malang for knowledge about local culture that must be preserved until now in fourth grade elementary school students. The journal explains that from the results of media expert validation it reaches 95% and material expert validation reaches 100% including valid, while field trials reach a percentage of 95% classified as effective and interesting media. The difference lies in the material, which consists of several kinds of local wisdom of South Malang as outlined in Adobe Flash media, namely the arts of Akera, Ganesha, turyyan inscription, kemuning inscription, Malangan mask dance, larung loren and others while the media developed by the researcher contains material on the diversity of traditional houses in Indonesia. Another difference is that one of the qualitative data is in the form of an assessment through open-ended questionnaires, while the research conducted by researchers uses qualitative data in the form of a closed questionnaire which is compiled by providing answer choices through a questionnaire on the needs of teachers and students.

Research on learning media has been carried out by Yuke Rindayu Sintya, Eddy Sutadji and Ery Tri Djatmika (2020: 1105-1114) entitled "Development of Interactive Multimedia in Thematic Learning for Class V Elementary Schools". This research shows that the product can improve student learning outcomes. The product is very valid with an average percentage of 89.9%, very practical with an average percentage of 94.5% and this media is very interesting with an average percentage of 96%. The difference between this research and the research conducted by the researcher is that this research and development uses the Lee and Owens model, this research and development produces a product that is packaged in a CD that can be copied via flash and is equipped with a user manual and lesson plans, multimedia development using Adobe Flash CS3, the material contains thematic learning in which there are lessons containing science, social studies, SBdP, Indonesian, and PPKn. While the research carried out by researchers using research on the development of the Borg and Gall models, produces products in the form of applications that can be shared via links, e-mails, flashdisks, instructions for use are contained in the media, using Adobe Flash CS6, media development on social studies learning content for home diversity materials. customs in Indonesia.

Based on the description above, the purpose of this study is to develop a design, test feasibility, and test the effectiveness of interactive learning media based on Adobe Flash with the NHT model on social studies learning outcomes for fourth grade students of SDN Gugus Sultan Agung Demak.

## 2. RESEARCH METHODS

This study uses the Research and Development (R&D) method. According to Borg and Gall (in Sugiyono, 2016: 9) R&D research is a research method used to develop or validate products used in education or learning activities.

The development model used in this study is the model proposed by Borg and Gall. The stages of the development model include (1) potential and problems; (2) data collection; (3) product design; (4) design validation; (5) design revision; (6) product trial; (7) product revision; (8) trial use. Researchers limit it to trials of using Adobe Flash-based interactive media products for the diversity of traditional houses in Indonesia because they are tailored to the needs of researchers, while other considerations are time and cost efficiency required by researchers.

The subjects of this study were 20 fourth grade students at SDN Bumharjo 2 Demak. Product trials in small groups were carried out on 6 fourth grade students at SDN Bumiharjo 1 Demak.

Data collection uses test and non-test techniques. This study uses a formative test technique in the form of pretest and posttest which contains multiple choice items. The formative test in this study was used to determine the effectiveness of using Adobe Flash-based interactive learning media with the Numbered Head Together model for the diversity of traditional houses in Indonesia in grade IV SD Gugus Sultan Agung, Demak Regency before and after using the learning media, while the non-test technique used observation, interviews, questionnaires, and documentation. The researcher determined the research variables, namely the independent variable and the dependent variable. The independent variables in this study were interactive learning media based on Adobe Flash,

Data analysis techniques include product data analysis, initial data analysis, and final data analysis. Product data analysis was obtained from the results of the feasibility test on interactive media based on Adobe Flash with the NHT model based on the criteria for the validation questionnaire of media experts, material experts, the results of teacher and student responses. Initial data analysis is to analyze the needs of teachers and students for interactive media based on Adobe Flash material on the diversity of traditional houses in Indonesia and the normality test. The final data analysis was obtained from the pretest and posttest learning outcomes, then the data were analyzed using t-test and n-gain test.

### 3. RESEARCH RESULTS AND DISCUSSION

The results of the research on the development of interactive media based on Adobe Flash with the NHT model in social studies learning include: (1) the development of interactive media design based on Adobe Flash with the NHT model, (2) the feasibility of interactive media based on Adobe Flash with the NHT model, and (3) the effectiveness of the media. Adobe Flash based interactive NHT model.

#### Potential and Problems

The potential and problem stages are carried out using interview techniques with fourth grade teachers at SDN Gugus Sultan Agung Demak and document data in the form of student final assessment learning outcomes (PAS) for class IV odd semesters for the 2020/2021 school year. Based on the results of interviews, obtained several problems in class IV SDN Gugus Sultan Agung Demak, namely: 1) the use of technology-based learning media is not optimal, 2) the learning process is still using lecture models, assignments, questions and answers, discussions, and demonstrations, 3) lack of resources learning used in class IV, namely in the form of teacher books, student books, and other teacher handbooks, 5) the low interest in student learning in social studies learning, 6) the average social studies learning outcomes for fourth grade students are still low.

#### Data collection

Researchers used data collection techniques such as interviews, making a questionnaire on the needs of students and teachers, the material to be presented and looking for library sources and relevant research results. In this case, the researcher collects data through interviews and documentation data so that it is known the cause of the low social studies learning outcomes for grade IV students, namely the use of technology-based learning media is not optimal so that the alternative solution to this problem is to develop interactive learning media products based on Adobe Flash. The product that is developed needs to be designed in advance so that it requires data in the form of the results of the analysis of the needs of teachers and students for the learning media developed to suit their needs.

#### Product Design

The results of data collection through a needs questionnaire are then formulated into a product prototype that will be developed by researchers. The prototype is a rough design scheme of the product made. The product produced in this study is an adobe flash-based interactive learning media with the NHT model for social studies learning in class IV on the diversity of traditional houses in

Indonesia. The media is designed according to the basic competencies and indicators to be achieved on the diversity of traditional houses in Indonesia. Before the manufacturing stage, the researcher looked for materials for the content and made a design (prototype). The product design steps developed include: (1) preparation of the format, material, and design layout, and (2) application in Adobe Flash CS 6 software.

#### Adobe Flash Based Interactive Media Feasibility Assessment with NHT Model

Validation is the process carried out to test the interactive learning media products based on Adobe Flash with the NHT model developed whether or not it is feasible if used in learning activities. In this study, the validation of the instructional media design was assessed by a media expert validator, namely Dr. Kustiono, M.Pd. and material expert, namely Dra. Arini Estiastuti, M.Pd. Product validation uses a research instrument in the form of a questionnaire assessment sheet so that the validator can assess and provide suggestions in the questionnaire then researchers can make improvements to the product made. The percentages of feasibility assessments carried out by material experts and media experts are as follows.

Table 1. Assessment Results of Material Experts and Media Experts

Validator	Validation Device	Percentage	Criteria
Material Validator	Material Validation	96.8%	Very Worthy
Media Validators	Media Validation	100%	Very Worthy

Based on table 1, the results of the assessment of material experts and media experts show the percentages of 96.8% and 100% with very feasible criteria. Based on the results of the feasibility assessment, Adobe Flash-based interactive media with the NHT model deserves to be tested.

This is in line with the research conducted by Lilik Angraini, Sri Rahayu Lestari, Nursasi Handayani in 2019 with the title "Development of Biological Interactive Multimedia Based on Adobe Flash CS6 on Human Circulation System Material Class XI MIPA Malang National High School". The results of the assessment of material experts are 100%, media experts are 98.33%, field practitioners are 100%, and trials are 86.85%. So it can be concluded that multimedia products are valid, practical and effective for use in learning.

Other supporting research is research conducted by Zulfadewina, Adi Sucipto, Khairil Iba, Zulherman (2020) entitled "Development of

Adobe Flash CS6 Multimedia-Based Learning Media on Science Subjects Animal Breeding Materials". The results of this study showed material experts with a score of 89%, media experts 78%, teacher respondents 90%, and students 93%. So it can be concluded that the results of this study provide the meaning of learning innovation that supports student learning interests. So the researchers concluded that Adobe Flash-based interactive learning media with the NHT model were declared valid, and very feasible to be used as learning media.

#### Effectiveness of Adobe Flash Based Interactive Media with NHT Model

The effectiveness of developing interactive learning media based on Adobe Flash with the NHT model was analyzed using the normality test, t-test, and n-gain test. The normality test aims to determine whether the data from the pretest and posttest are normally distributed or not. The normality test in this study used Lilliefors with the Microsoft Excel 2013 application. The t-test was used to determine whether there were differences in students' abilities before and after being treated using Adobe Flash-based interactive learning media for the diversity of traditional houses in Indonesia. The following is a table of the results of the t-test calculation.

Table 2. Results of T-test

Group	Average Pretest	Posttest Average	tcount	table	Criteria
Small	45.00	80.00	2,415	2,228	Ha accepted
Big	47.67	78.33	5,690	2,024	Ha accepted

Based on table 2 above, it shows that the results of the small group t-test obtained tcount (2.415) > ttable (2.228) and the large group t-test results obtained tcount (5.690) > ttable (2.024). If tcount > ttable then the criteria Ha is accepted and H0 is rejected, whereas if tcount < ttable then H0 is accepted and Ha is rejected. Based on table 2, it can be concluded that in this study H0 was rejected and Ha was accepted, meaning that there were differences in the learning outcomes of Social Studies Class IV material on the diversity of traditional houses in Indonesia before and after using Adobe Flash-based interactive learning media in small groups and large groups.

Supporting research is the research conducted by Hanin Nalinda and Sri Sulistyorini in 2018 with the title "Development of PBL-Assisted Interactive Multimedia in Class IV Science

Lessons." The results of the study explain that hypothesis testing with t-test, paired sample test output with excel obtained t count (10.871) > t table (2.0639) then Ho is rejected and Ha is accepted, which means that there is a significant difference between science learning outcomes for energy source materials before and after using PBL-assisted interactive multimedia.

Other supporting research is research by Tri Yuliansyah Bintaro (2017) with the title "Developing Interactive Multimedia on the Thematic-Integrative Learning for Grade IV Students under the Sub-Theme My Food is Health and Nutritious" in the prima Pendidikan journal, 5(2) , pages 193-202. The results obtained are independent sample t-test analysis with a significance level of 0.05. This research produces interactive multimedia that fits material experts and media experts into the very good category. There was an increase in the percentage of student learning outcomes, namely an increase in the pretest and post-test scores. This shows that Adobe Flash media is effectively used to improve the quality of learning.

The average improvement test or the n-gain test is used to determine the difference in the increase in learning outcomes obtained by comparing the n-gain pretest and posttest. The results of the n-gain test analysis of pretest and posttest data can be seen in the following table.

Table 3. Average Increase Test Results (N-gain)

Category	Score
Average Pretest	47.67
Posttest Average	78.33
Average difference	30.67
N-Gain	0.60
Category	Currently

Based on table 3, data analysis is presented on the results of the calculation of the N-gain pretest and posttest on a large scale, the N-gain is 0.60, meaning that it is at 0.3 (g) 0.7, i.e. N-Gain is included in the moderate increase category. In line with the supporting research conducted by Silvia Siburian, Surya Masniari Hutagalung, Syahnan Daulay in 2020 entitled "Development of Adobe Flash CS6 Learning Media in Short Story-Based on Learning Text of Advanced Local Community of Batak Toba Students in Tanjungmorawa". The results of the teacher and student field trials obtained 96.15% with very good criteria. The difference in learning outcomes obtained from before and after using adobe flash CS6 learning media was 58.23%. So it can be concluded that the quality of the learning media made is very good.

## 4. CONCLUSION

Based on the results of data analysis and discussion in this study, the following conclusions can be drawn: (1) Adobe Flash-based interactive media with NHT model based on validation from material experts obtained a percentage of 96.8% (very feasible) and media experts obtained a percentage of 100 % (very feasible); (2) Adobe Flash-based interactive media with the NHT model can increase the average student learning outcomes by 0.60 in the medium category; (3) the results of the test of the difference in the average pretest and posttest scores in the t-test calculation shows  $t_{count} > t_{table}$  ( $5,690 > 2,024$ ), then  $H_a$  is accepted. Based on these results, it is concluded that interactive learning media based on Adobe Flash with the NHT model is effective for social studies learning outcomes for grade IV SDN Gugus Sultan Agung Demak.

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